

IN THE CLAIMS:

The following claim listing will replace all prior claim listings.

1. - 14. (*Cancelled*)

15. (*Previously Presented*) Magnetic nanoparticles comprising iron oxide and a polymer and produced by subjecting the iron oxide and the polymer to high pressure homogenization in an aqueous medium, the nanoparticles comprising at least 50 mass percent iron, having hydrodynamic diameter of less than 200 nm and higher magnetization at low magnetic field strengths than the iron oxide from which the magnetic nanoparticles were produced.

16. (*Previously Presented*) Magnetic nanoparticles according to claim 15, wherein the nanoparticles have the properties of forming in water or an aqueous solution a colloid which is stable for a long period in the absence of an external magnetic field.

17. (*Previously Presented*) Magnetic nanoparticles according to claim 15, wherein the nanoparticles have the property of being separable by permanent magnets from a medium in which the nanoparticles are contained.

18. (*Previously Presented*) Magnetic nanoparticles according to claim 16, wherein the nanoparticles have the property of being separable from the water or the aqueous solution in which they have formed a colloid.

19. (*Cancelled*)

20. (*Previously Presented*) Magnetic nanoparticles according to claim 15, wherein the iron oxide comprises magnetite or maghemite or a mixture of magnetite and maghemite.

21. (*Previously Presented*) Magnetic nanoparticles according to claim 20 [[19]], wherein the iron oxide or mixture of iron oxides contains at least one bivalent or trivalent metal ion other than iron ions.

22. (*Previously Presented*) Magnetic nanoparticles according to claim 15, wherein the polymer comprises synthetic polymer.

23. (*Previously Presented*) Magnetic nanoparticles according to claim 15, wherein the polymer comprises natural or derivatized polysaccharide.

24. (*Previously Presented*) Magnetic nanoparticles according to claim 23, wherein the polysaccharide comprises dextrane.

25. (*Previously Presented*) Magnetic nanoparticles according to claim 24, wherein the dextrane is derivatized with functional groups or substructures.

26. (*Cancelled*)

27. (*Cancelled*)

28. (*Cancelled*)

29. (*Cancelled*)

30. (*Currently Amended*) Magnetic nanoparticles comprising iron oxide and a polymer and produced by sequentially subjecting the iron oxide and a combination of iron oxide and polymer to high pressure homogenization in an aqueous medium, the nanoparticles comprising at least 50 mass percent iron, having hydrodynamic diameter of less than 200 nm and higher magnetization at low magnetic field strengths than the iron oxide from which the magnetic nanoparticles were produced. The magnetic nanoparticles of claim 15 wherein the subjecting comprises the steps of:

providing an aqueous suspension of iron oxide in a high pressure homogenizer,

homogenizing the suspension of iron oxide in the high pressure homogenizer at a pressure of at least 500 bar,

combining an aqueous solution of a polymer with the homogenized suspension of iron oxide in the high pressure homogenizer,

homogenizing the resulting combination in the high pressure homogenizer at a pressure of at least 500 to 1200 bar to form a suspension of the magnetic nanoparticles, and

separating the magnetic nanoparticles from the suspension of magnetic nanoparticles under the action of a magnetic field.

31. (*Previously Presented*) The magnetic nanoparticles of claim 30 wherein the magnetic field in the separation step is provided by a permanent magnet.

32. (*Currently Amended*) Magnetic nanoparticles comprising iron oxide and a polymer and produced by subjecting the iron oxide to high pressure homogenization in an aqueous medium, the nanoparticles comprising at least 50 mass percent iron, having hydrodynamic diameter of less than 200 nm and higher magnetization at low magnetic field strengths than the iron oxide from which the magnetic nanoparticles were produced, The magnetic nanoparticles of claim 15 wherein the subjecting comprises the steps of:

providing an aqueous suspension of iron oxide in a high pressure homogenizer,

homogenizing the suspension of iron oxide in the high pressure homogenizer at a pressure of at least 500 bar,

combining an aqueous solution of a polymer with the homogenized suspension of iron oxide in the high pressure homogenizer,

adjusting the pH of the combined aqueous suspension of iron oxide and aqueous solution of polymer by adding an alkaline substance to obtain the magnetic nanoparticles, and

washing the magnetic nanoparticles with water under the influence of a high gradient magnetic field.

33. (*Currently Amended*) The method magnetic nanoparticles of claim 15 on any one of claims 15, 30, 31, or 32 wherein each the homogenization monogenization step is carried out at a pressure of 500 to 1200 bar.

34. (*Currently Amended*) The magnetic nanoparticles of claim 15 wherein the iron oxide is produced *in situ* in the an aqueous medium, wherein the aqueous medium has a

pH > 7 having pH > 7.

35 (*Previously Presented*) The magnetic nanoparticles of claim 34 wherein the aqueous medium comprises a solution of ammonia and water.